

REMARKS

Claims 17-21, 23-29, 31-32 and 34-36 are pending. Claims 23-27 have been withdrawn from consideration. Claims 1-16, 22, 30 and 33 have been previously cancelled. By this Amendment, Claims 17, 28, 31 and 34 are amended. As support for the amendments can be found in the originally filed application, e.g., see Page 24 and Figures 12-13, Applicants respectfully submit that no new matter is presented.

Claim Rejections - 35 U.S.C. §103

Claims 17-21, 28-29, 31-32 and 34-36 is rejected under 35 USC §103(a) as being unpatentable over GB 2,064,676 to Morgan in view of JP 02-107705 to Kikuchi. Applicants respectfully traverse the rejection.

Claims 17, 28, 31 and 34 each recite a method of producing a hydrodynamic type porous oil-impregnated bearing having, among other steps, the step of press fitting the porous blank with the forming pattern inserted therein into a die to apply a compacting pressure to the porous blank wherein the inner peripheral surface of the porous blank is press fit against the forming pattern.

The Office Action asserts it would have been obvious to one of ordinary skill in the art to have formed the sintered oil bearing using the process taught by Morgan and removed the compacting pressure so as to utilize the spring-back of the porous blank in releasing the forming pattern from the inner peripheral surface of the porous blank in light of the teachings of Kikuchi, in order to prevent friction, that is, the contact between the grooves and the forming pattern of the core pin.

Applicants respectfully disagree with the assertion made by the Office Action for the following reasons.

Applicants note the Office Action candidly admits that it is not known for certain whether Morgan discloses removing compacting pressure to use the spring-back of the porous blank in releasing the forming pattern from the inner peripheral surface of the porous blank. Applicants further note that page 5 of Morgan sheds light on the stated uncertainty. In particular, Applicants note that Morgan explains that upon removing the sizing core rod, the areas of the compact (blank) which have been subjected to the higher stresses spring back more than areas subjected to lower stresses. The noted differential in the amount of spring back results in a slight taper at the leading edge of the flattened areas of the ridges, which is important since the taper produces a large hydro-dynamic oil pressure across the face of the flattened tops of the ridges, thereby increasing the load carrying capacity of the bearing.

Therefore, Applicants respectfully submit Morgan clearly does not remove the compacting pressure to use the spring back of the compact (blank) in releasing the sizing core rod from the inner peripheral surface of the compact (blank). Rather, Morgan uses spring back to flatten the central regions of the ridges formed on the surface of the compact (blank) and not to release the core rod therefrom.

Furthermore, Applicants note that Morgan teaches a compacting pressure is applied onto the compact (blank) 22, 22A, 22A' to press the compact 22, 22A, 22A' around the core rod 16, 26, 26' and press fit the compact 22, 22A, 22A' into the die 14, 24, 24'. Morgan does not teach or suggest applying a compacting pressure to the compact 22, 22A, 22A' with the core rod 16, 26, 26' inserted therein to press fit the compact 22, 22A, 22A' and core rod 16, 26, 26' into the die 14, 24, 24' because Morgan fails to teach or suggest first inserting the core rod 16, 26, 26' into the compact 22, 22A,

22A' and then applying a compact pressure to the two items so as to press fit them into a die.

Moreover, Applicants respectfully point out the Office Action appears to misunderstand what is recited by Claim 2 of Morgan. Specifically, Applicants note the Office Action states Claim 2 of Morgan recites "herringbone" grooves when in fact Claim 2 of Morgan recites the word "hereinbefore." Figures 6-9 of Morgan also do not teach or illustrate herringbone shaped grooves. Furthermore, page 5, line 53 of Morgan does not include the word "herringbone." Finally, the herringbone pattern is not provided with an inner peripheral surface that is a radial bearing surface, but rather is provided with one or both ends that is/are a thrust bearing surface(s).

Kikuchi fails to overcome or otherwise address the deficiency in the teachings of Morgan.

Specifically, Applicants note Kikuchi teaches a method having the steps of setting a sizing core 11 by inserting the large diameter part 11a into the metallic mold 15 (see Figure 2A); pressing the sintered body 4 into the annular gap between the outer surface of the sizing core 11 and the inner surface of the metallic mold 15 (see Figure 2B); pressing the sintered body 4 using the upper and lower punches 12 and 13, respectively, to apply the compacting pressure to the sintered body 4 (see Figure 2C); and knocking the sintered body 4 out of the mold 15 to use the spring back of the sintered body 4 in releasing the sizing core 11 from the inner periphery of the sintered body 4.

Applicants note Kikuchi fails to teach or suggest applying a compacting pressure to the sintered body 4 with the large diameter portion 11a of the sizing core 11 inserted

therein to press fit the sintered body 4 and sizing core 11 into the mold 15 wherein the inner peripheral surface of the sintered body 4 is pressed against the sizing core 11. Rather, Kikuchi clearly teaches the sintered body 4 is pressed around the sizing core 11 and between the core 11 and mold 15. See Figures 2A-F.

Applicants also note the large diameter portion 11a of the sizing core 11 is smooth and lacks any grooves or other such patterns formed therein.

To establish *prima facie* obviousness of a rejected claim, each and every feature of the claim must be taught or suggested by the applied art. See M.P.E.P. §2143.03. As explained above, Morgan and Kikuchi, alone or in any combination, do not teach or suggest applying a compacting pressure to a compact (blank) with a sizing rod (forming pattern) inserted therein to press fit the compact (porous blank) and sizing rod (forming pattern) into a die wherein the inner peripheral surface of the compact (porous blank) is pressed against the sizing rod (forming pattern). As such, Applicants respectfully submit Claims 17, 28, 31 and 34 are not obvious in view of Morgan and/or Kikuchi and should be deemed allowable.

Claims 18-21 depend from Claim 17. Claim 29 depends from Claim 28. Claim 32 depends from Claim 31. Claims 35-36 depend from Claim 34. It is respectfully submitted that these dependent claims should be deemed allowable for at least the same reasons Claims 17, 28, 31 and 34 are allowable, as well as for the additional subject matter recited therein.

Withdrawal of the rejection is respectfully requested.

Form PTO-1449

Applicants respectfully note the Form PTO-1449 attached to the Information Disclosure Statement dated September 10, 2004, has not yet been returned with the Examiner's initials indicating the Examiner has considered the submitted references cited therein. Applicants respectfully request the Examiner consider the references and provide a copy of Form PTO-1449 with the Examiner's initials next to the cited references indicating the Examiner properly considered the reference. A copy of the PTO Form 1449 is attached for the Examiner's convenience.

Conclusion

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejection, allowance of the Claims 17-21, 23-29, 31-32 and 34-36, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 100725-00047.**

Respectfully submitted,
ARENT FOX PLLC

A handwritten signature in black ink, appearing to read 'Murat Ozgu', is written over the printed name.

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Enclosures: Information Disclosure Statement dated November 30, 2005; PTO SB 08/a
Copies of September 10, 2004 IDS and PTO Form 1449